

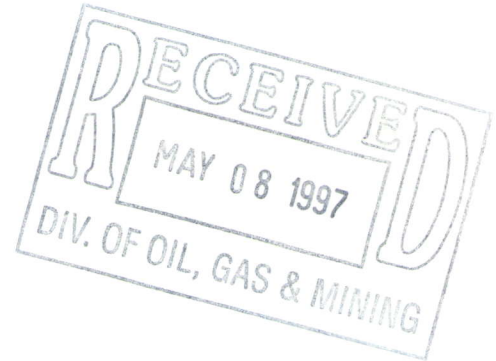


m/045/017

BARRICK RESOURCES (USA) INC. Tel: (801) 268-4447
Barrick Mercur Gold Mine Fax: (801) 266-4296
P.O. Box 838
Tooele, Utah 84074-0838

May 2, 1997

Mr. Lowell P. Braxton
Utah Department of Natural Resources
Division of Oil, Gas, and Mining
1594 West North Temple
Suite 1210, Box 145801
Salt Lake City, UT 84114-5801



Dear Mr. Braxton:

Subject: M/045/017 Sunrise Waste Rock Disposal Site, Final
Reclamation Report and Request For Surety Bond Release

Attached please find the above referenced report on the Sunrise Waste Rock Disposal Site. As indicated in the report, Barrick has met all requirements of the Division for final closure of the Sunrise site. Additionally, Barrick is requesting a Surety Bond reduction, as calculated at \$268,627.00, a 3.1% reduction of the total Surety contract. The area being released is 25 acres or 2.8% of the 898 acres of specific disturbance. The slight discrepancy in the area and dollar reductions is due to the time value of money, the accelerated reclamation reduces the affect of inflation on the reclamation costs.

Please contact me at extension 335 should you require any further information or have any questions concerning this submittal.

Respectfully,

A handwritten signature in cursive script that reads 'David P. Beatty'.

David P. Beatty
Environmental/Occupational Health Coordinator

Attachments

cc: C. L. Landa
G. M. Eurick
T. B. Faddies
C. L. Olsen
S. D. Davis
R. Johnson (Tooele County)
D. W. Hedberg (UDOGM)
L. Cuntzler (UDOGM)
A. Gallegos (UDOGM)

SUNRISE WASTE ROCK DISPOSAL SITE

**FINAL RECLAMATION REPORT
and
REQUEST FOR SURETY BOND RELEASE**

MAY 1997

Sunrise Waste Rock Disposal Site
Final Reclamation Report and Surety Bond Release

Background:

The Sunrise Waste Rock Disposal Site was developed in 1989 at the head of wild Horse Canyon, directly west of Mercur's Sacramento pit, in USGS South ½ of Section T6S R3W. The waste rock consists primarily of Rhyolite mined from the Sacramento pit. The site consists of approximately 25 acres of disturbed ground.

Earthwork: [R647-4-111-1.15, 6, 12]

The Sunrise waste rock was originally placed by end dumping from the top using 85 ton haul trucks at the angle of repose of the rock (approximately 1.4:1). To create a stable and workable slope the dump was dozed down from the top in two stages.

The final configuration is shown in Figure 1 and designed as follows:

- 18 acres on the lower end at 2.5:1 slope.
- 2 acres on the upper end at 2.0:1 slope.
- 1 acres of flat ground between the upper and lower slopes.
- 4 acres of flat ground at the top of the upper slope.

The shaping was completed during 1992. Following the shaping, the 25 acres were covered with a nominal one foot of topsoil from stockpile T-17, originally stripped from the Sacramento pit area and stockpiled in 1989 at the top of the Sunrise site..

Drainage: [R 647-4-111-2]

To protect the Sunrise waste disposal site from water damage due to high precipitation or runoff events, water bars were cut across the slope, at 200 ft. slope length intervals. These water bars were angle cut into the slope and at a gradient of 2 percent from the center of the dump to the outside edges (groins). The vertical center channel and both side groins were lined

with straw mesh erosion control blankets following seeding.

Vegetation: [R 647-4-111-13]

The Sunrise Waste Rock Disposal site was seeded mid October 1992 by hydraulic seeding methods, applying approximately 1500 lb. Of wood fiber mulch, 100 lbs. 16-16-8 fertilizer, and 45 lb. Pure live seed per acre. The seed consisted of the following 12 native species of grasses, forbes and shrubs:

15% Thickspike Wheatgrass	10% Russian Wildrye
15% Western Wheatgrass	5% Cicer Milkvetch
13% Slender Wheatgrass	6.5% Lewis Blue Flax
8% Basin Wildrye	3% Palmer Penstemon
5% Indian Ricegrass	1.5% Mtn. Big Sage
13% Smooth Bromegrass	5% Ladak Alfalfa

Safety: [R 647-4-111-1.15]

The Sunrise Waste Rock Disposal site is located directly west of the Sacramento pit high wall. The top flats borders the Sacramento pit high wall for 550 ft, and therefore it was necessary to install a safety berm and fence structure east of the sunrise dump. The structure consists of a 3 ft trench dug, with the spoils placed along the east side of the trench as a berm. Additionally, a 550 ft, 6' 6" fence consisting of field fence and barbwire was installed on the east side of the berm and trench and then posted with signing every 50 ft. depicting the danger of the high wall.

Vegetation Studies and Closure: [R 647-4-111-13.11]

On July 1 and 2, 1996 vegetation line transect studies were performed on the Sunrise Dump, consisting of eight transect lines performed on the flats and eleven transect lines performed on the slopes. The line transects were performed according to Appendix 1 - Quantitative Transect Data Method. A summary of the results of the transects is shown in Appendix 2 indicating the average vegetative cover to be 72 percent on the flats and 76 percent on the slopes, with minimum required transects calculated at two on the flats

and seven on the slopes.

The actual Transect Data gathered, summary Data Sheets, and sketch of the Transect locations on the Sunrise site are included in Appendix 3. The data shows a diversity of plant community of eight out of twelve seeded species successfully growing and self propagating. Appendix 4 shows several photo plots taken on the Sunrise waste disposal site and overall visuals of the site. The photo's were taken July 30, 1996 and support the transect data gathered.

The native vegetation in the Mercur area was studied in 1982 by JBR Consultants of Salt Lake City, Utah, prior to disturbance at Mercur. Additionally, another baseline study was performed by JBR Consultants, in November, 1996. The baseline studies show that on Southwest facing slopes ranging from 3.7:1 to 1.0:1 (slopes similar in grade and aspect of the Sunrise site), the native vegetation is a Pinyon Juniper plant community. These plant communities consist of 51 percent pinyon pine and Utah Juniper, 23 percent shrubs, 4 percent forbs and 22 percent grasses at a mean cover of 44.3 percent. Excerpts from the 1996 baseline studies are included in Appendix 5.

Surety Bond Release Request: [R 647-4-111-13.11]

As per the Utah Division of Oil, Gas, and Mining Re-vegetation Guidelines, Barrick is required to Re-vegetate a site to a level of 70 percent of original pre-mining vegetative cover, have growth sustained for three growing seasons, and vegetation to be self propagating. Once these parameters are met, the Division can consider the site for surety bond release.

The Sunrise Waste Rock Disposal site was seeded in October 1992, and has sustained self propagating growth through four complete growing seasons, including 1993 through 1996. The Sunrise site shows an overall average vegetative cover of 74.9 percent, far above the aforementioned DOGM requirement of 70 percent of the native 44.3 percent cover, or 31 percent required vegetation for this slope. The data also indicates an acceptable plant diversity of grasses, shrubs and forbes.

Barrick therefore is requesting the UDOGM to release a portion of the Surety Bond equal to the Sunrise Waste Rock disposal site.

Appendix 6, shows a copy of table 7.3-1 taken from section seven (Reclamation Bond) of the Notice of Intention to Amend Mining and Reclamation Plan under [R 613-004-118], submitted by Barrick to UDOGM in June 1996 and scheduled for approval in May 1997.

The table shows the following costs associated with reclaiming waste rock disposal sites at Mercur;

Regrading	=	\$ 3,039.00/acre
Topsoil Cover	=	3,253.00/acre
Support	=	189.00/acre
Seeding	=	1,712.00/acre
Total	=	\$ 8,193.00/acre

The Sunrise site is 25 acres in size and equals \$204,825.00. Additionally the Bond contains safety fencing costs of \$8.00 per linear foot at 550 feet or \$4,400.00 for the Sunrise site, and safety signing at approximately \$1,000.00. The sub-total Bond release request is therefore \$210,225.00.

The total Bond was \$8,784,185.00 as adjusted for inflation over five years to (2,001 Dollars).

The new total Bond figures should be adjusted as shown in Appendix 7, with a new total Surety Bond figure of \$8,515,558.00, a total reduction of \$268,627.00.

FIGURE 1

Sunrise Waste Disposal Site - Final Configuration Topo

APPENDIX 1

Quantitative Transect Data Method

► Quantitative transect data

The line-point method involves using a 100-meter tape and taking point data at each meter mark. A "pin" is dropped from the tape to the ground surface and ground cover recorded as vegetation, rock, litter, or bare ground. Any overstory shrub cover is also recorded, if the "pin" hits it. Vegetation is recorded by species and listed under the categories of trees, shrubs, forbs, grasses, etc.

It is suggested that transects be taken along the contour, every 10 feet, and as required for minimum sample size.

The number of line-point transects required by DOGM per site is at least 15. Under DOGM guidelines, the minimum number of transects (n_{min}) at the required 90% confidence level is determined by the following formula:

n = sample size

$$n_{min} = \frac{t^2 s^2}{25}$$

where t is a listed value;

s = standard deviation

After two or three transects are finished, the minimum transect number is calculated for the site. An example follows:

Transect 1 30 points vegetation out of 100; veg. cover is 30%

Transect 2 40 points vegetation out of 100; veg. cover is 40%

n = sample size = 2

$$\text{Mean} = \frac{30\% + 40\%}{2} = 35\%$$

$$\text{Standard deviation} = \text{the square root of: } \frac{(30^2 + 40^2) - \frac{(30+40)^2}{2}}{n-1} = 7$$

$$n_{min} = \frac{3.078^2 \times 7^2}{25} = 18$$

Degrees of freedom (n-1) ^a	Tabulated "t" values ^b
1	3.078
2	1.886
3	1.638
4	1.533
5	1.476
6	1.440
7	1.415
8	1.397
9	1.393
10	1.372
11	1.363
12	1.356
13	1.350
14	1.345
15	1.341
16	1.337
17	1.333
18	1.330
19	1.328
20	1.325
21	1.323
22	1.321
23	1.319
24	1.318
25	1.316
26	1.315
27	1.314
28	1.313
29	1.311
30	1.310
40	1.303
60	1.296
120	1.289
	1.282

^aDegrees of freedom (df) are equal to the number of samples (n) collected minus one.

^bTabulated "t" values are for a two-tailed confidence interval and a probability of 0.20 (the same values are applicable to a one-tailed confidence interval and a probability of 0.10).

NINE - 4

Revision 0
Date September 1986

APPENDIX 2

Sunrise - Line Transect Summary

BARRICK MERCUR GOLD MINE		SUNRISE WASTE ROCK DISPOSAL	
Sunrise Dump Line Transect Results and Calculations - April 3, 1997			
Flats - Transect #	% Cover	Slopes - Transect #	% Cover
1	72	1	73
2	63	2	80
3	76	3	82
4	71	4	79
5	72	5	71
6	78	6	90
7	78	7	57
8	71	8	85
		9	64
		10	75
		11	86
Flats		Slopes	
Column 1		Column 1	
Mean	72.62	Mean	76.55
Standard Error	1.73	Standard Error	2.98
Median	72.00	Median	79.00
Mode	71.00	Mode	NA
Standard Deviation	4.90	Standard Deviation	9.87
Variance	23.98	Variance	97.47
Kurtosis	1.30	Kurtosis	0.05
Skewness	-0.89	Skewness	-0.71
Range	15.00	Range	33.00
Minimum	63.00	Minimum	57.00
Maximum	78.00	Maximum	90.00
Sum	581.00	Sum	842.00
Count	8.00	Count	11.00
Confidence Level(0.900000)	2.85	Confidence Level(0.900000)	4.90
t value (n-1 = 7)	1.415	t value (n-1 = 10)	1.372
n (min) =	1.9	n (min) =	7.3

APPENDIX 3

Transect Summaries
Transect General Locations
Transect Field Data

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 1 OF 2

DATE SEEDED: October 1992

DATE: 7/1/96TRANSECT LENGTH: 100 metersORIENTATION: FLATS

FINDING	Middle TRANSECT # 1	Middle TRANSECT # 2	Lower TRANSECT # 3	Lower TRANSECT # 4
BARE GROUND	20	25	19	23
ROCK	2	4	5	6
LITTER	6	4		
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	1	1		1
OTHER WEED: <i>Hounds Tongue</i> <i>Sand Burr</i>	1			
THICKSPIKE WHEATGRASS	24	17	10	7
WESTERN WHEATGRASS			7	
SLENDER WHEATGRASS	1		9	2
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	29	26	8	9
RUSSIAN WILDRYE				
CICER MILKVETCH	4	2	26	20
LEWIS BLUE FLAX	2			2
PALMER PENSTEMON	3	5	2	8
MOUNTAIN BIG SAGEBRUSH	1	1		2
LADAK ALFALFA	6	11	18	20
Frequency Percent	72 %	63 %	76 %	71 %

NOTES:

GRAZING OR BROWSING: Domestic Wildlife *Deer / Wild Horses*

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease Insects Pests Other: *Grasshoppers / weevil*

POOR VEGETATION: Toxic Acidic Fertilizer (Lack / Excess) Lack of Topsoil

SPECIAL CONDITIONS: Drought Year Wet Year Other: *Hot / dry*

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 2 OF 2

DATE SEEDED: October 1992

DATE: 7/1/96TRANSECT LENGTH: 100 metersORIENTATION: FLATS

FINDING	LOWER TRANSECT #5	MIDDLE TRANSECT #6	UPPER TRANSECT #7	UPPER TRANSECT #8
BARE GROUND	25	19	18	26
ROCK	3	2	4	3
LITTER		1		
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	8	2	1	
OTHER WEED: <i>Curly dock</i>	1	1		
THICKSPIKE WHEATGRASS	16	24	13	7
WESTERN WHEATGRASS	2	2	4	2
SLENDER WHEATGRASS			2	8
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	17	28	5	16
RUSSIAN WILDRYE				
CICER MILKVETCH	4	6	10	8
LEWIS BLUE FLAX	1			
PALMER PENSTEMON	7	2	3	1
MOUNTAIN BIG SAGEBRUSH	2			2
LADAK ALFALFA	14	13	40	27
Frequency Percent	72 %	78 %	78 %	71 %

NOTES:

GRAZING OR BROWSING:

Domestic

WildlifeDEER \ Wild Horses

EROSION:

Wind

Water

Mechanical

ORV's

DEVELOPMENT PROBLEMS:

Disease

Insects

Pests

Other: GRASSHOPPERS / WEAVIL

POOR VEGETATION:

Toxic

Acidic

Fertilizer (Lack / Excess)

Lack of Topsoil

SPECIAL CONDITIONS:

Drought Year

Wet Year

Other: HOT / dry

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 1 OF 3

DATE SEEDED: October 1992

DATE: 7/21/96TRANSECT LENGTH: 100 metersORIENTATION: Slopes

FINDING	MAIN TRANSECT # 1	MAIN TRANSECT # 2	MAIN TRANSECT # 3	MAIN TRANSECT # 4
BARE GROUND	26	18	18	18
ROCK		2		3
LITTER	1			
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	2	1	1	1
OTHER WEED: <u>SAND Burr</u>				1
THICKSPIKE WHEATGRASS	11	15	10	6
WESTERN WHEATGRASS		1	4	2
SLENDER WHEATGRASS	4	1	1	
BASIN WILD RYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	10	7	6	1
RUSSIAN WILD RYE				
CICER MILK VETCH	8	10	12	12
LEWIS BLUE FLAX	3			
PALMER PENSTEMON	9	5	10	6
MOUNTAIN BIG SAGEBRUSH	2	4	2	3
LADAK ALFALFA	24	36	36	47
Frequency Percent	73 %	80 %	82 %	79 %

NOTES:

GRAZING OR BROWSING: Domestic Wildlife DEER / Wild Horses

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease Insects Pests Other: GRASSHOPPERS / WEAVIL

POOR VEGETATION: Toxic Acidic Fertilizer (Lack / Excess) Lack of Topsoil

SPECIAL CONDITIONS: Drought Year Wet Year Other: HOT / dry

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 2 OF 3

DATE SEED: October 1992

DATE: 7/2/96TRANSECT LENGTH: 100 metersORIENTATION: Slopes

FINDING	MAIAL / middle TRANSECT #5	middle TRANSECT #6	middle TRANSECT #7	upper TRANSECT #8
BARE GROUND	28	10	43	15
ROCK	1			
LITTER				
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN		3		5
OTHER WEED: <i>Curly doc</i>				5
THICKSPIKE WHEATGRASS	13	20	5	17
WESTERN WHEATGRASS	1	13	1	8
SLENDER WHEATGRASS	1		1	
BASIN WILD RYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	2	36	6	30
RUSSIAN WILD RYE				
CICER MILKVETCH	13		2	6
LEWIS BLUE FLAX	3	1		
PALMER PENSTEMON	12	4	3	
MOUNTAIN BIG SAGEBRUSH	4	1	9	1
LADAK ALFALFA	21	12	30	13
<i>Rubber Rabbit Bush</i>	1			
Frequency Percent	71 %	90 %	57 %	85 %

NOTES:

GRAZING OR BROWSING: Domestic

Wildlife

Deer / Wild Horses

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease

Insects

Pests

Other: *Grasshopper / weevil*

POOR VEGETATION: Toxic Acidic

Fertilizer (Lack / Excess)

Lack of Topsoil

SPECIAL CONDITIONS: Drought Year

Wet Year

Other: *Hot / dry*

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 3 OF 3

DATE SEED: October 1992

DATE: 7/21/96TRANSECT LENGTH: 106 metersORIENTATION: SLOPE

FINDING	TRANSECT # ^{UPPER} 9	TRANSECT # ^{UPPER} 10	TRANSECT # ^{UPPER} 11	TRANSECT #
BARE GROUND	21	21	8	
ROCK			1	
LITTER				
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	10	4	4	
OTHER WEED: <i>Curly doc</i>	5			
THICKSPIKE WHEATGRASS	16	12	10	
WESTERN WHEATGRASS	5	1	7	
SLENDER WHEATGRASS		2		
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	20	27	37	
RUSSIAN WILDRYE				
CICER MILKVETCH	4	8	7	
LEWIS BLUE FLAX	1		1	
PALMER PENSTEMON	4	4	9	
MOUNTAIN BIG SAGEBRUSH	2	2	5	
LADAK ALFALFA	11	19	8	
<i>Rubber Rabbit Brush</i>	1		1	
	64%	75%	86%	

NOTES:

GRAZING OR BROWSING: Domestic ~~Wildlife~~

DEER / WILD HORSES

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease ~~Insects~~ PestsOther: *GRASSHOPPER / WEAVER*

POOR VEGETATION: Toxic Acidic Fertilizer (Lack / Excess) Lack of Topsoil

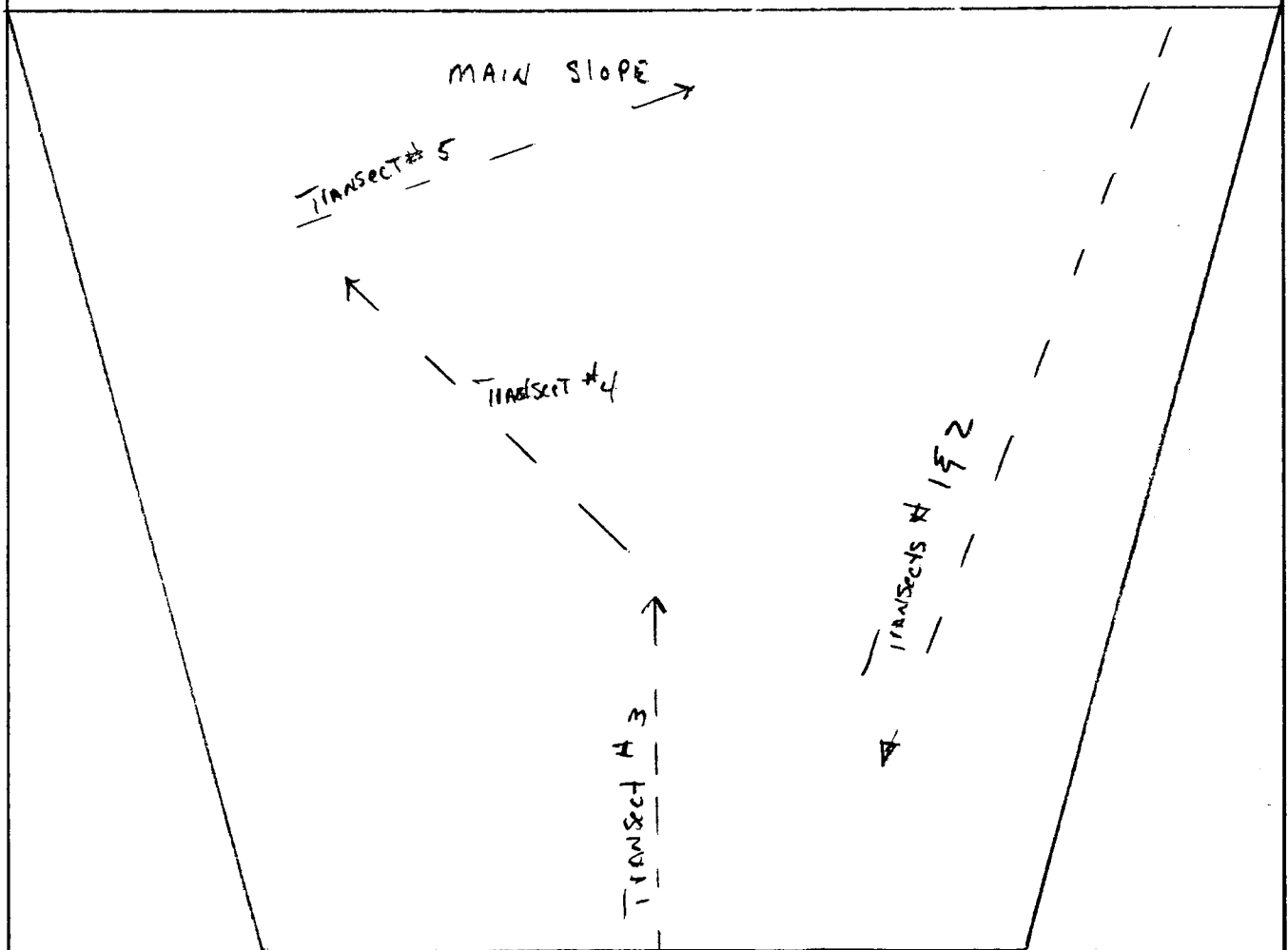
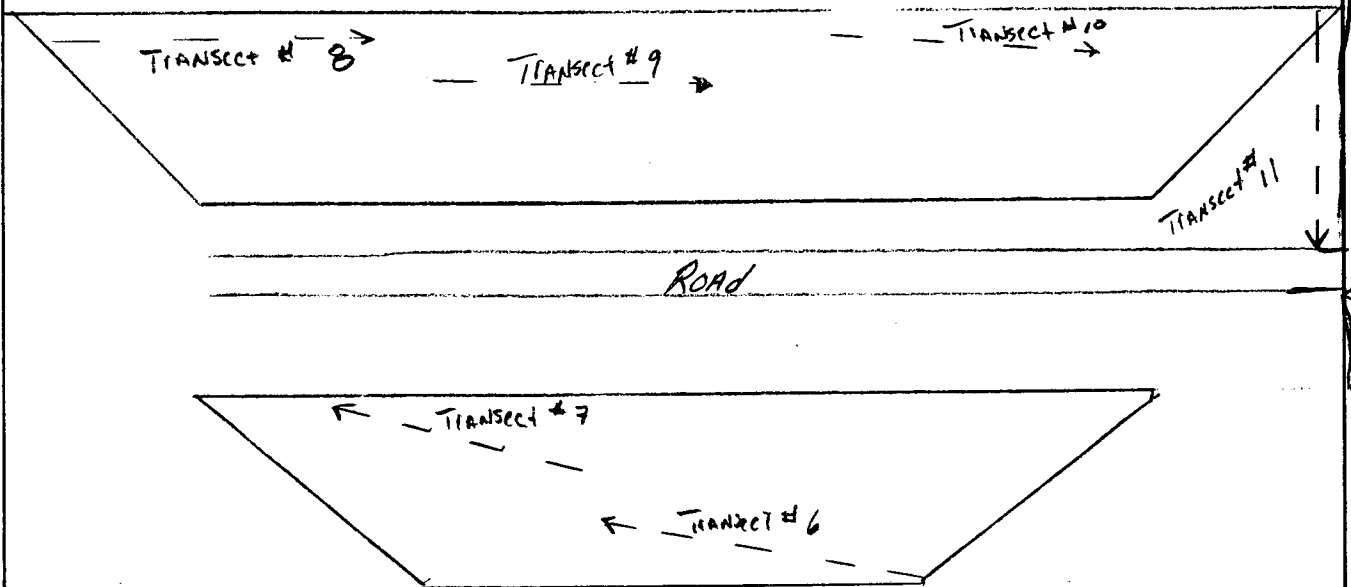
SPECIAL CONDITIONS: Drought Year Wet Year Other: *HOT / dry*

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



W. R. Scump
SLOPE TRANSECTS

MINI / GENIEM
Do Hogan
7-2-96



BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 1 OF 2

DATE SEEDED: October 1992

DATE: 7/1/96

TRANSECT LENGTH: 100 M

ORIENTATION: West

F/A + middle

F/A + middle

F/A + lower

F/A + lower

FINDING	TRANSECT #1	TRANSECT #2	TRANSECT #3	TRANSECT #4
BARE GROUND	20	2	19	23
ROCK	2	4	5	6
LITTER	6	4		
UNKNOWN #1: (SAND BURL)	1	1		
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	1	1	1	1
OTHER WEED:	1			
THICKSPIKE WHEATGRASS	24	2	10	7
WESTERN WHEATGRASS		1	7	
SLENDER WHEATGRASS	1	1	9	2
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	25	26	8	9
RUSSIAN WILDRYE				
CICER MILKVETCH	4	2	26	20
LEWIS BLUE FLAX	2			2
PALMER PENSTEMON	3	5	2	8
MOUNTAIN BIG SAGEBRUSH	1	1	1	1
LADAK ALFALFA	6	11	18	20

NOTES:

GRAZING OR BROWSING: Domestic

Wildlife

Acce/ wild horses

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease Insects Pests Other: None

POOR VEGETATION: Toxic Acidic Fertilizer (Lack / Excess) Lack of Topsoil

SPECIAL CONDITIONS: Drought Year Wet Year Other: Hot No-Rain (114)

Cover 8 72%

63%

76%

71%

Marty & Doug

Start Time 9:20

Finish Time 9:45

Transsect #2

Start: 9:55

Finish 10:15

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 2 OF 2

DATE SEEDED: October 1992

DATE: 7/1/96TRANSECT LENGTH: 100 mORIENTATION: North-South

FLAT Lower

FLAT middle

7-10 (Top FLAT)

FINDING	TRANSECT #5	TRANSECT #6	TRANSECT #7	TRANSECT #8
BARE GROUND	 25	 19	 19	 26
ROCK	3	2	4	3
LITTER		1		
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	 8	2	1	
OTHER WEED: 	1	1		
THICKSPIKE WHEATGRASS	 16	 24	 13	 7
WESTERN WHEATGRASS	2	2	4	2
SLENDER WHEATGRASS			2	 8
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	 17	 28	 5	 16
RUSSIAN WILDRYE				
CICER MILKVETCH	4	 6	 10	 8
LEWIS BLUE FLAX	1			
PALMER PENSTEMON	 7	2	3	1
MOUNTAIN BIG SAGEBRUSH	2			2
LADAK ALFALFA	 14	 12	 40	 27

NOTES:

GRAZING OR BROWSING:

Domestic

Wildlife

Deer/wild horses

EROSION:

Wind

Water

Mechanical

ORV's

DEVELOPMENT PROBLEMS:

Disease

Insects

Pests

Other:

Grasshoppers/weevils

POOR VEGETATION:

Toxic

Acidic

Fertilizer (Lack / Excess)

Lack of Topsoil

SPECIAL CONDITIONS:

Drought Year

Wet Year

Other:

Holiday

mean → 72%

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 1 OF 3

DATE SEED: October 1992

DATE: 7/2/96TRANSECT LENGTH: 100 m

ORIENTATION: _____

SLOPE (ALL TRANSECTS)

FINDING	TRANSECT # 1	TRANSECT # 2	TRANSECT # 3	TRANSECT # 4
BARE GROUND	76	19	78	18
ROCK		2		3
LITTER	1			
UNKNOWN #1:				
UNKNOWN #2:				
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN	2	1	1	1
OTHER WEED: <u>SAND BUCK</u>				1
THICKSPIKE WHEATGRASS	11	15	10	6
WESTERN WHEATGRASS	1	1	4	2
SLENDER WHEATGRASS	4	1	1	
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	10	7	6	1
RUSSIAN WILDRYE				
CICER MILKVETCH	8	10	12	12
LEWIS BLUE FLAX	3			
PALMER PENSTEMON	7	5	10	6
MOUNTAIN BIG SAGEBRUSH	2	4	2	3
LADAK ALFALFA	24	30	36	47
<u>Top going down</u>	<u>max slope</u>	<u>middle to</u>		
	<u>→ E to W</u>	<u>lowest slope</u>	<u>Lowest slope</u>	<u>HI SLOPE</u>
		<u>down</u>	<u>from 35° to 40°</u>	<u>up slope W→E</u>
			<u>going up</u>	

73%

90%

82%

79%

NOTES:

GRAZING OR BROWSING:

Domestic

Wildlifedeer/wild Horses

EROSION:

Wind

Water

Mechanical

ORV's

DEVELOPMENT PROBLEMS:

Disease

Insects

Pests

Other: _____

POOR VEGETATION:

Toxic

Acidic

Fertilizer (Lack / Excess)

Lack of Topsoil

SPECIAL CONDITIONS:

Drought Year

Wet Year

Other: Very dry

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 2 OF 3

DATE SEEDED: October 1992

DATE: 7 / 2 / 96TRANSECT LENGTH: 100 m

ORIENTATION: _____

SLOPE

FINDING	TRANSECT #5	TRANSECT #6	TRANSECT #7	TRANSECT #8
BARE GROUND	 28	 10	 11	 15
ROCK	1		43	
LITTER				
UNKNOWN #1: <i>Rubus</i>	1			
UNKNOWN #2: <i>Curtis Doe</i>				5
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE				
MULLEN		3		5
OTHER WEED:				
THICKSPIKE WHEATGRASS	 13	 30	5	 17
WESTERN WHEATGRASS	1	13	1	 8
SLENDER WHEATGRASS	1		1	
BASIN WILDRYE				
INDIAN RICEGRASS		 36		
SMOOTH BROMEGRASS	2	 	6	 30
RUSSIAN WILDRYE				
CICER MILKVETCH	 13		2	 6
LEWIS BLUE FLAX	3	1		
PALMER PENSTEMON	 12	4	3	
MOUNTAIN BIG SAGEBRUSH	 4	1	9	1
LADAK ALFALFA	 21	 12	 30	 13
	<i>up slope</i>	<i>MIDDLE SLOPE</i>	<i>ACROSS S → N</i>	<i>UPPER SLOPE / FLAT</i>
	<i>up slope</i>	<i>ACROSS S → N</i>	<i>ACROSS S → N</i>	<i>N → S</i>

71%

95%

57%

85%

NOTES:

GRAZING OR BROWSING: Domestic Wildlife*deer/wild horses*

EROSION: Wind Water Mechanical ORV's

DEVELOPMENT PROBLEMS: Disease Insects Pests Other: _____

POOR VEGETATION: Toxic Acidic Fertilizer (Lack / Excess) Lack of Topsoil

SPECIAL CONDITIONS: Drought Year Wet Year Other: very dry

BOND RELEASE - TRANSECT FIELD DATA FORM

PROJECT: Sunrise Waste Rock Dump

PAGE: 3 OF 3

Slopes

DATE SEED: October 1992

DATE: 7/2/96

TRANSECT LENGTH: 100 m

ORIENTATION: _____

FINDING	TRANSECT #9	TRANSECT #10	TRANSECT #11	TRANSECT #12
BARE GROUND	 2	 2	8	
ROCK			1	
LITTER				
UNKNOWN #1: <i>Cordia All</i>	 5		1	
UNKNOWN #2: <i>Quercus Rubra</i>	1		1	
UNKNOWN #3:				
UNKNOWN #4:				
UNKNOWN #5:				
RUSSIAN THISTLE			1	
MULLEN	 10	4	4	
OTHER WEED:				
THICKSPIKE WHEATGRASS	 10	 12	 10	
WESTERN WHEATGRASS	 5	1	 7	
SLENDER WHEATGRASS		2		
BASIN WILDRYE				
INDIAN RICEGRASS				
SMOOTH BROMEGRASS	 20	 27	 37	
RUSSIAN WILDRYE				
CICER MILKVETCH	4	 8	 7	
LEWIS BLUE FLAX	1		1	
PALMER PENSTEMON	4	4	 9	
MOUNTAIN BIG SAGEBRUSH	2	2	 5	
LADAK ALFALFA	 11	 19	 8	
	<i>SLOPE - TOP</i>	<i>SLOPE - TOP</i>	<i>VERY SLOPE TOP → E</i>	
	<i>N → S</i>	<i>N → S</i>	<i>E → W</i>	

NOTES:

*cover 90**79%**79%**91%*

GRAZING OR BROWSING:

Domestic

Wildlife*deer / wild horses*

EROSION:

Wind

Water

Mechanical

ORV's

DEVELOPMENT PROBLEMS:

Disease

Insects

Pests

Other: _____

POOR VEGETATION:

Toxic

Acidic

Fertilizer (Lack / Excess)

Lack of Topsoil

SPECIAL CONDITIONS:

Drought Year

Wet Year

Other: *very dry*

APPENDIX 4

Sunrise Photo Plots
(All Photo's Taken July 30, 1996)

Sunrise Waste Rock Disposal Site



2.5 : 1 Slope

Sunrise Waste Rock Disposal Site



2.0 : 1 Slope



2.5 :1 Slope

Sunrise Waste Rock Disposal Site

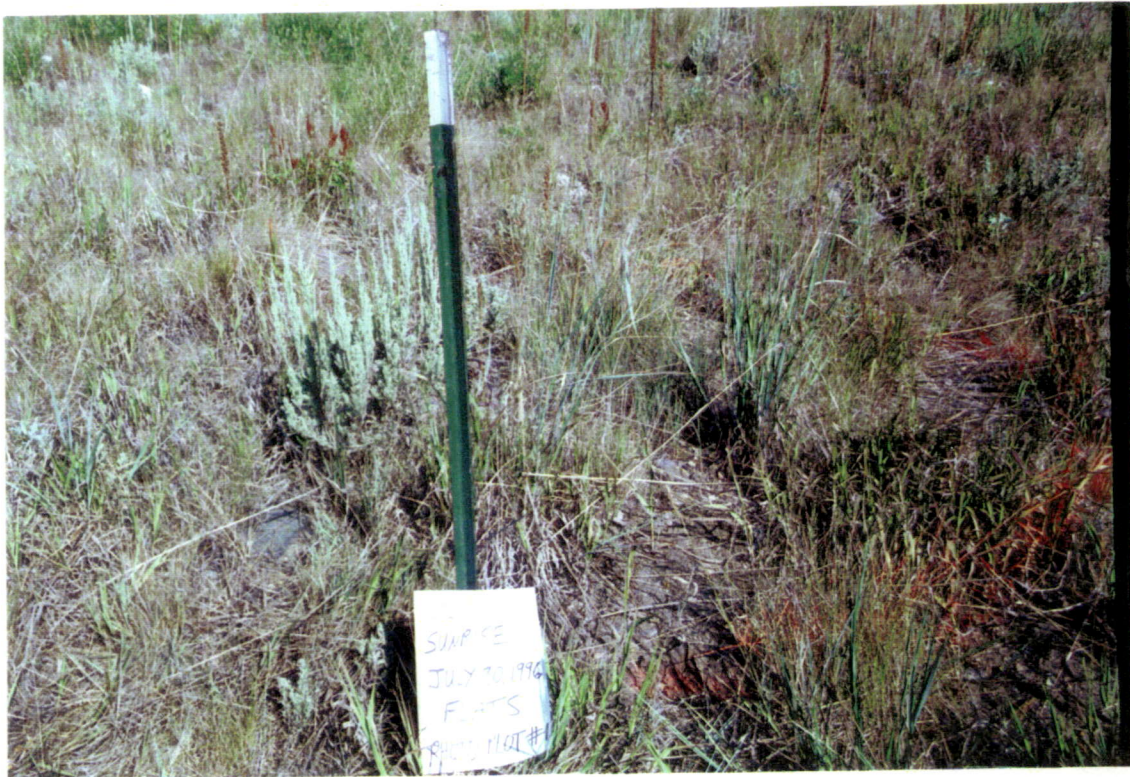


Photo Plot #1 - Upper Flats



Photo Plot #2 - 2.0 : 1 Slope

Sunrise Waste Rock Disposal Site



Photo Plot #3 - 2.0 : 1 Slope (Center Section)



Photo Plot #4 - 2.5 : 1 Slope (Typical)

APPENDIX 5

Mercur Baseline Report Excerpts

The soil sampling program for the topsoil piles revealed that most of the topsoil materials are similar in nature. The pH values indicate neutral to slightly alkaline soils with adequate cation exchange capacity and only slightly influenced by sodium salts. The major nutrients of calcium, magnesium, and potassium are generally sufficient for plant growth. An exception is the low potassium values in topsoil stockpiles T-20, 21, 22, and 26. Phosphorus values are moderately low but this is normal in soils of the Basin and Range Province. Nitrogen values are also moderately low but this is normal in soils of arid climates. The sodium values are low and of no concern. The sulfate values are low in all the stockpiles except T-22 which is high and indicates the soils should not be used for revegetation as the sulfate load would adversely affect seed germination and plant growth.

The fertilizer requirements for all the topsoil stockpiles except T-20 and 21 would be two to four tons of mulch high in nitrogen such as green alfalfa hay, alfalfa pellets or sludge. Stockpiles T-20, 21 and 26 would also require an acid base fertilizer high in potassium such as potassium nitrate applied at a rate of 100-125 lbs/acre.

4.2 VEGETATION

The mean vegetation cover for the pinyon-juniper plant community was 44.3 percent. Of the total vegetative cover within the pinyon-juniper plant community, nearly 51 percent was tree species primarily pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*). Approximately 23 percent was comprised of shrubs, 4 percent forbs and 22 percent grass species. Of the 22 percent grass, 12 percent was cheat grass (*Bromus tectorum*) which occurred on the lower slope within the sample area.

The mean vegetation cover for the mountain shrub plant community was 82.2 percent. Of the total vegetative cover within this plant community, nearly 72 percent was tree canopy, primarily Gambel oak (*Quercus gambelii*). Approximately 14 percent was comprised of shrubs, 6.6 percent forbs and 7.1 percent grass species, Kentucky bluegrass (*Poa pratensis*) was the dominant grass.

4.2.1 QUALITATIVE SAMPLES

Pinyon-Juniper Plant Community

The pinyon-juniper plant community existed on steep dry hillsides that were predominately south, south-west, south-east and east facing slopes. Slopes ranged from 30-45 percent in grade. The tree species were widely scattered on lower slopes and more densely spaced on the steeper and higher elevational slopes. The community was also characterized by talus and rock outcrops throughout the site.

More often than not, tree canopy extended to the ground of both the pinyon and Utah juniper. Isolated areas with this plant community had a predominance of cheat grass as an understory.

No erosion was evident, even though vegetative ground cover was low and slopes were steep. This is most likely due to the heavy armoring with rocks of a wide variety of sizes and the low precipitation in this area. It was also noted that even light-weight litter materials tended to remain in place under the vegetation from which it was shed.

Some of the samples, due to the randomness, were entirely within the talus slopes and are reflected as such in the data.

Mountain Shrub Plant Community

This plant community was more or less a combination of a couple of accepted mixed brush communities that were grouped due to their close proximity and small size. Generally, it is accepted to break out the communities that are dominated by Gambel oak from communities dominated by mountain mahogany (*Cercocarpus* spp.).

These sites occurred on east, northeast and northwest facing slopes, ranging from 15-30 percent in grade. These sites were dominated by tree canopy, to an almost closed canopy in some areas and a high degree of litter in the understory. Little erosion was noted and the litter remained in place.

Gambel oak was generally 12 to 15 feet tall. Forbs were difficult to identify given the season of sampling.

4.2.2 SAMPLE ADEQUACY CALCULATIONS

To determine the number of transects required to adequately sample the vegetation in the reference area, the formula presented in the DOGM guidelines was used.

A 90 percent confidence level, with a 10 percent change in the mean was used to determine sample adequacy levels for cover parameters. Results of the adequacy tests are shown in the following tables. The total vegetation cover values were used in the sample adequacy calculations.

Table 4.2-1 Sample Adequacy Information Mercur Canyon - Pinyon/Juniper Plant Community				
Parameter	n	Mean	Std	n _{min}
Cover	16	44.3	22.1	44.5

Table 4.2-2 Sample Adequacy Information Mercur Canyon - Mountain Shrub Plant Community				
Parameter	n	Mean	Std	n _{min}
Cover	15	82.2	9.4	2.4

4.3 WILDLIFE

4.3.1 MULE DEER

The winter aerial survey covered all of the baseline study area and the lower elevations north and south of Mercur Canyon. The flight was made on February 10, 1996 in cool temperatures with high thin clouds and calm winds. The upper elevations in Mercur and Manning watersheds were searched for tracks in the deep snows but only a few coyote tracks were observed. The remainder

Barrick Mercur Mine

Waste Rock Disposal Areas
Earthwork and Revegetation Calculations

TABLE 7.3-1

Equipment	Regrade D9R Dozer	Topsoil Haul/Place 631 E Scraper	Topsoil Blade/Scarify 14H Grader	Water Truck	Supervisor	D6E SR Agri. Tractor & Seed Drill	Hydroseed	TOTAL COSTS
Quantity - Acres								
Tops	78.6	78.6	78.6	78.6		78.6	0	
Slopes	171.9	171.9	171.9	171.9		0	171.9	
Total	250.5	250.5	250.5	250.5		78.6	171.9	
Production Rate - */Hr								
Tops	152	104	2.04	2.04		7.30		
Slopes	244	104	2.04	2.04		7.30		
Time Required - Hr								
Tops	1161.0	1219.3	38.5	38.5		10.8		
Slopes	2987.9	2666.7	84.3	84.3		0.0		
Total	4148.9	3886.0	122.8	122.8	607.0	10.8		
Cost - \$/Hr								
Equipment	143.98	166.86	66.94	84.40	8.56	49.25		
Labor	39.50	39.50	39.50	37.95	44.70	37.95		
Total	183.48	206.36	106.44	122.35	53.26	87.20		
Seed, Mulch, Fert Cost \$						39,300		
Total Costs \$	761,233	801,907	13,070	15,024	32,329	40,239	206,280	\$ 1,870,082
Total Costs Per Acre \$	3,039	3,201	52	60	129	512	1,200	\$ 8,193

* LCY/HR for Regrading and Scraper. ACRES/HR for Ripping, Grader, Water Truck, D6E

DOGM NOI Amendment - Section 7 Surety Bond, Table 7.10-1 (Modified)

Barrick Mercur Mine
RECLAMATION COST ESTIMATE SUMMARY

AREA	COST \$	SUNRISE DUMP	NEW SURETY \$
PITS	\$682,620		\$682,620
WASTE ROCK DISPOSAL AREAS	\$1,870,082	\$204,825	\$1,665,257
FACILITIES	\$180,157		\$180,157
VALLEY FILL LEACH AREAS	\$997,521		\$997,521
TAILING IMPOUNDMENT	\$1,375,199		\$1,375,199
HAUL ROADS	\$381,820		\$381,820
GENERAL DISTURBANCE AREAS	\$526,411		\$526,411
OTHER DIRECT COSTS	\$860,600	\$5,400	\$855,200
SUB-TOTAL	\$6,874,410	\$210,225	\$6,664,185
MOBILIZATION / DEMOB (2.5%)	\$171,860	\$5,256	\$166,605
CONTINGENCY (10%)	\$687,441	\$21,023	\$666,419
SUB-TOTAL	\$7,733,711	\$236,503	\$7,497,208
INFLATION @ 2.58% FOR 5 YEARS	\$1,050,473	\$32,124	\$1,018,349
GRAND TOTAL SURETY (2001 Dollars)	\$8,784,184	\$268,627	\$8,515,557